

ARTICLE 34

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CLAIMS

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1. A telephone system for a vehicle comprising:
- a vehicle transceiver, on board said vehicle, and connectable to a cellular telephone network for bi-directional communication therewith;
 - a server terminal, on board said vehicle, connected to said transceiver and having a unique location area address;
 - a plurality of user terminals, distributed on board the vehicle, each capable of accepting an identity of a user of the cellular telephone system and each connected to said server terminal whereby a plurality of users may communicate simultaneously with said network via the server terminal; and
 - a location data base for identifying users of the cellular telephone system when their identifies are accepted by respective user terminals and for associating those users with said location area address to permit communication to be established between those users and the cellular telephone system via the server terminal.
2. A telephone system according to claim 1 further comprising:
- a plurality of interface systems each for providing a communication path between said transceiver and a switching network within a respective region, the switching network being connected to said telephone network and connectable to at least one of said interface systems when the vehicle is located in the region corresponding to that interface system thereby providing a communication path between said transceiver and said telephone network; and
 - control apparatus operable to select which one of said interface systems should provide the communication path to the transceiver when the vehicle is located in the regions corresponding to a plurality of interface systems.
3. A telephone system according to claim 1 or 2 in which said location data base is connected to said telephone network and is accessible to enable said network to locate each of said accepted users and thereby enable bi-directional communication between said telephone network and each of said identified users.

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4. A telephone system according to claim 2 or claim 3 when dependent on claim 2 wherein said control apparatus is further operable to control simultaneously the handover of said established communication when the vehicle moves from a first one of said regions to a second one of said regions.
5. A telephone system according to claim 4 wherein said identification address remains unaltered as said vehicle moves from said first to said second respective regions.
6. A telephone system according to any preceding claim wherein said telephone system allows bi-directional communication between each user terminal in said vehicle and said telephone network.
7. A telephone system according to claim 2 or any of claims 3 to 6 when dependent upon claim 2 wherein each said interface system comprises a server satellite and at least one associated ground earth station.
8. A telephone system according to any one of the preceding claims wherein said vehicle transceiver comprises an aeronautical earth station for bi-directional communication via satellite to a ground earth station which is connectable to the telephone network.
9. A telephone system according to any preceding claim wherein said location database is stored in a mobile switching centre.
10. A telephone system according to any preceding claim wherein said user terminal is connected to said server terminal via a first fixed connection and said server terminal is connected to said vehicle transceiver via a second fixed connection.
11. A telephone system according to claim 10 wherein said first fixed connection is an RS-232 serial bus or USB.

12. A telephone system according to claim 10 wherein said first fixed connection is a universal serial bus (USB).
13. A telephone system according to claim 10 wherein said second fixed connection is a CEPT-E1 connection.
14. A telephone system according to any preceding claim wherein said user terminal comprises a cellular phone unit provided with an identification receptor for a subscription identifier of a user of the cellular telephone system.
15. A telephone system according to claim 14 in which the identifier is a SIM card or Smart Card.
16. A telephone system according to any one of claims 1 to 13 wherein said user terminal comprises a phone receptor for receiving a user cellular phone.
17. A telephone system according to claim 16 wherein said user cellular phone is adapted to deactivate radio transmission by the cellular phone when said cellular phone is connected to said phone receptor.
18. A telephone system according to any preceding claim wherein said server terminal comprises a personal computer (PC).
19. A telephone system according to any preceding claim wherein said location database identifies which user of the cellular telephone system is connected to a user terminal by a subscription identifier.
20. A telephone system according to claim 2 or any of claims 3 to 19 when dependent on claim 2 wherein said switching network and control apparatus comprise an internet network.
21. A telephone system according to claim 20 wherein said location database is an

Intranet location register.

22. A telephone system according to any preceding claim, wherein the vehicle is an aircraft.

23. A method of operating a telephone system within a vehicle to enable a plurality of users to simultaneously communicate with a ground based cellular telephone system, which method comprises:

establishing a fixed connection through a plurality of user terminals distributed on board the vehicle to a server terminal having a unique location area address;

establishing a connection between said server terminal and an onboard transceiver;

identifying users of the cellular telephone system when their identities are accepted by respective user terminals; and

associating identified users with said location area address to permit simultaneous communication to be established between those users and the cellular telephone system via the server terminal.

24. A method according to claim 23, further comprising:

establishing a communication path between said transceiver and a switching network via a satellite and associated ground station when said vehicle is in a respective region wherein said switching network is connected to said cellular telephone system.

25. A method according to claim 23 or 24, further comprising:

selecting which satellite should provide a communication path to the transceiver when the vehicle is located in a region corresponding to a plurality of satellites.

26. A method according to any of claims 23 to 25, wherein the vehicle is an aircraft.

27. A telephone for use in a telephone system for a vehicle comprising: a vehicle transceiver, on board said vehicle, and connectable to a cellular telephone network for

bi-directional communication therewith; a server terminal, on board said vehicle, connected to said transceiver and having a unique location area address; a plurality of user terminals, distributed on board the vehicle, each capable of accepting an identity of a user of the cellular telephone system and each connected to said server terminal whereby a plurality of users may communicate simultaneously with said network via the server terminal; and a location data base for identifying users of the cellular telephone system when their identifies are accepted by respective user terminals and for associating those users with said location area address to permit communication to be established between those users and the cellular telephone system via the server terminal; said telephone being adapted to prevent RF emission when connected in a vehicle.

28. A telephone system constructed and arranged substantially as herein described with reference to or as shown in Figures 1 to 3.

29. A method as herein described with reference to or as shown in Figures 1 to 3.